

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
21 October 2004 (21.10.2004)

PCT

(10) International Publication Number  
WO 2004/090153 A3

(51) International Patent Classification<sup>7</sup>: C07H 21/04, (74) Agents: PLETTA, Gregory, T. et al.; EraGen Biosciences, Inc., 918 Deming Way, Suite 201, Madison, WI 53717-1933 (US).

(21) International Application Number: PCT/US2004/010029

(22) International Filing Date: 1 April 2004 (01.04.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 60/459,672 1 April 2003 (01.04.2003) US

(71) Applicant (for all designated States except US): ERAGEN BIOSCIENCES, INC. [US/US]; 918 Deming Way, Suite 201, Madison, WI 53717-1933 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): MOSER, Michael, J. [US/US]; 7406 Farmington Way, Madison, WI 53717 (US). VAN HOUT, Christopher, V. [US/US]; 204 N. Sego Road, Apt 5B, Madison, WI 53705-4948 (US). LARSEN, Christine, A. [US/US]; 221 South Highpoint Road, Apt. 118, Madison, WI 53717 (US). MARSHALL, David, J. [US/US]; 17 Newbury Circle, Madison, WI 53711 (US). PRUDENT, James, R. [US/US]; 3750 Country Grove Drive, Madison, WI 53719 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

(88) Date of publication of the international search report: 23 June 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2004/090153 A3

(54) Title: POLYMERASE INHIBITOR AND METHOD OF USING SAME

(57) Abstract: The present invention provides nucleic acid based polymerase inhibitors and methods for reducing non-specific polymerase extension and amplification in nucleic acid amplification reactions. The polymerase inhibitors provide a double stranded nucleic acid portion that is recognized by a polymerase enzyme as a template for extension but is incapable of being extended by the polymerase enzyme. The polymerase binds to the polymerase inhibitor which sequesters the enzyme until the temperature achieves a level that denatures the double stranded portion of the inhibitor after which the polymerase is released and can then catalyze nucleic acid extension.

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US04/10029

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : C07H 21/04; C12N 15/11  
US CL : 536/23.1, 24.5

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
U.S. : 536/23.1, 24.5

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
STN: EMBASE BIOSIS CAPLUS

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2003/046149 A3 (WANG et al) 5 June 2003. entire document	1-27

Further documents are listed in the continuation of Box C.

See patent family annex.

\* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

18 March 2005 (18.03.2005)

Date of mailing of the international search report

05 APR 2005

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Celine Qian, Ph.D.

Telephone No. 571-273-8300